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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,157	02/11/2004	Timo Vaananen	KOLS.087PA	3095
7590 Hollingsworth & Funk, LLC 8009 34th Avenue South Suite 125 Minneapolis, MN 55425			EXAMINER TRAN, TUAN A	
			ART UNIT 2618	PAPER NUMBER
			MAIL DATE 10/31/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/776,157

Applicant(s)

VAANANEN, TIMO

Examiner

Tuan A. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robin (5,745,848) in view of Scott (6,163,687).

Regarding claims 1-3, 7-8 and 17, Robin discloses a radio transceiver of a cellular radio system (See fig. 1), comprising: means for communicating on at least one radio frequency channel; means 124 for generating a clock signal {RF1, RF2}; and means 114 for controlling a frequency PLL synthesizer 112 based on control signals {AFC1, AFC2}, wherein controlling the frequency PLL synthesizer includes tuning the PLL 125 to compensate for frequency offset due to interference by the control signal AFC1 and shifting the frequency of the clock signal (equivalent to "controlling the pulse width of the clock signal") to compensate for internal interference arising from harmonic frequencies of the clock signal by the control signal AFC2 (See figs 1-2 and col. 2 line 15 to col. 3 line 46, col. 6 line 1 to col. 7 line 14, col. 9 lines 9-23). However, Robin does not explicitly mention that the control signals derived from a measurement of interference including external and internal interference. Scott teaches a concept for controlling a frequency PLL synthesizer comprising means (receiver includes analog part such as mixer and filter and digital part such as demodulator) for measuring CNR (it

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is widely known that in order to determine the CNR, peaks in the signal strength of the received signal are measured) caused by external and internal interference on a given radio channel of the synthesizer and a controller for controlling the synthesizer based on the measured CNR to compensate for external and internal interference and frequency offset (See fig. 1 and col. 1 lines 5-40, col. 4 lines 17-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the concept taught by Scott to derive the control signals, as disclosed by Robin, based on measured interference including external and internal interference from the receiver (i.e. harmonics from clocks, digital switching noise, and radiated and conducted sources of radio frequency) for the advantage of enhancing the tuning capability (more precise) of the frequency synthesizer of the transceiver.

Claims 9-11 are rejected for the same reasons as set forth in claims 1-3, as method.

Regarding claim 4, Robin & Scott disclose as cited in claim 3. Since Robin further discloses the control signal AFC2 (digital signal from the controller 114) control the pulse width of the clock signal (generated by analog component) (See fig. 1 and col. 9 lines 10-16); therefore, it is necessary to include an D/A converter to convert digital control signal to analog control signal to control the analog component.

Regarding claims 5-6 and 15-16, Robin & Scott disclose as cited in claims 1 and 3. Robin further discloses the radio transceiver is arranged to control the pulse width of the clock signal, whenever the transceiver begins communication on the given channel using a predetermined frame structure, prior to each frame used in the communication

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(frame-by-frame basic) (See figs. 2-4 and col. 5 line 55 to col. 6 line 20, col. 7 lines 15-32).

Claims 12-14 are rejected for the same reasons as set forth in claims 5-6, as method.

Response to Arguments

Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Tran whose telephone number is (571) 272-7858. The examiner can normally be reached on Mon-Fri, 10:00AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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